Air Force Approach to Risk Management

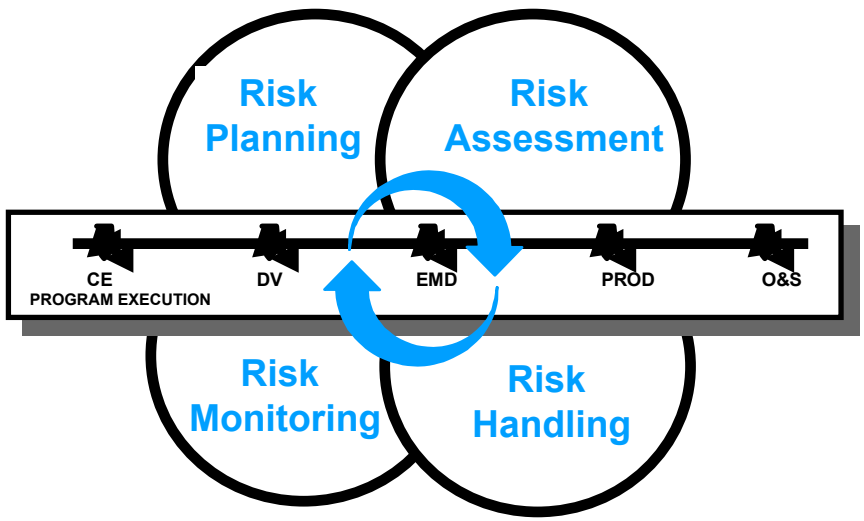
AFMC Risk Management Process Action Team

AFMC Pamphlet 63-101

10 May 1996

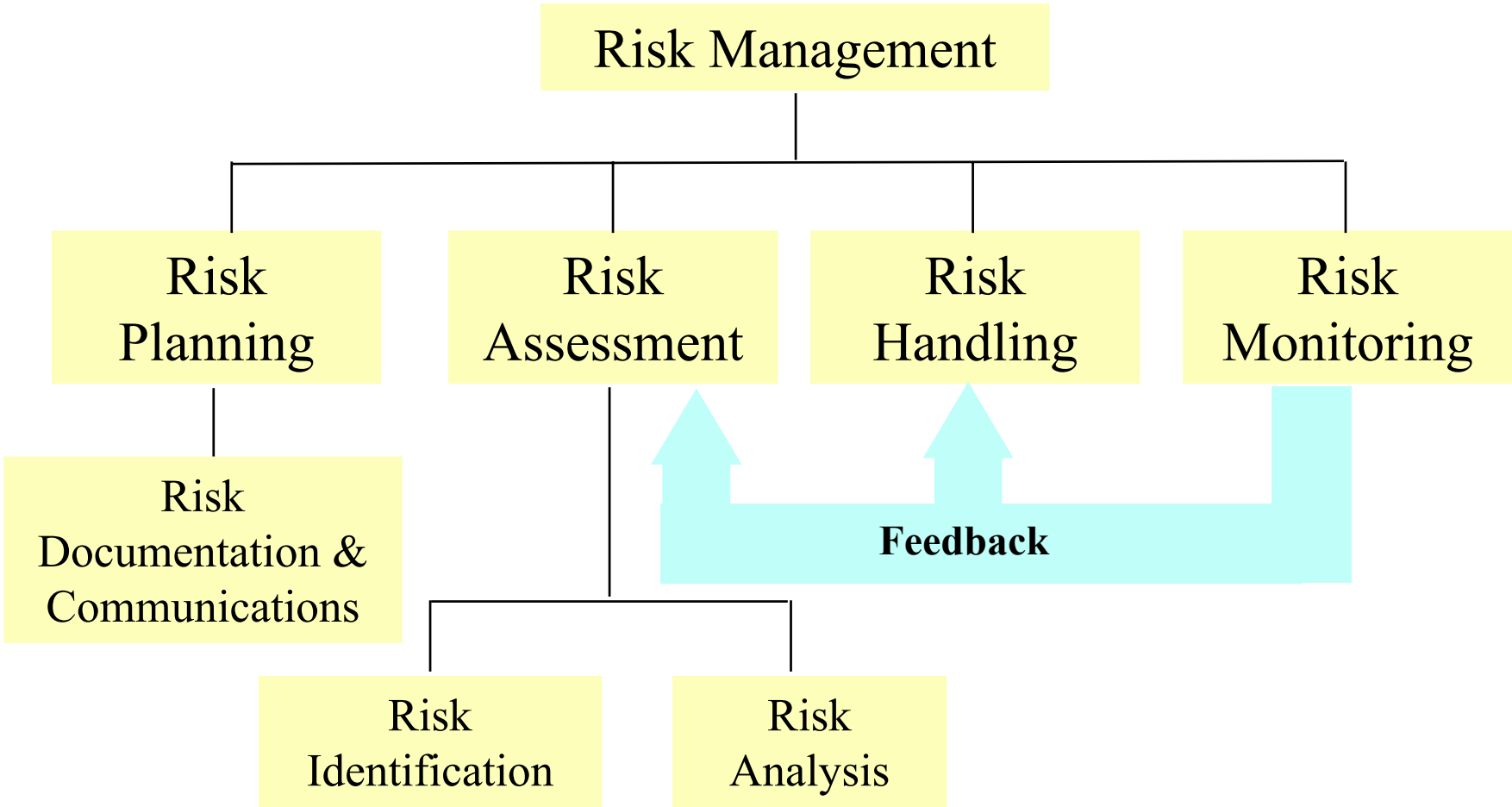
Risk Management Definition

- Based on DoD Risk Management Study
  - Definitions Submitted to Tri-Service 3 Apr 96
- AFMC Comments and Suggested Changes
- Covers Basic Risk Management Structure



Risk Management Structure

(DoD Risk Management Study)



Definitions

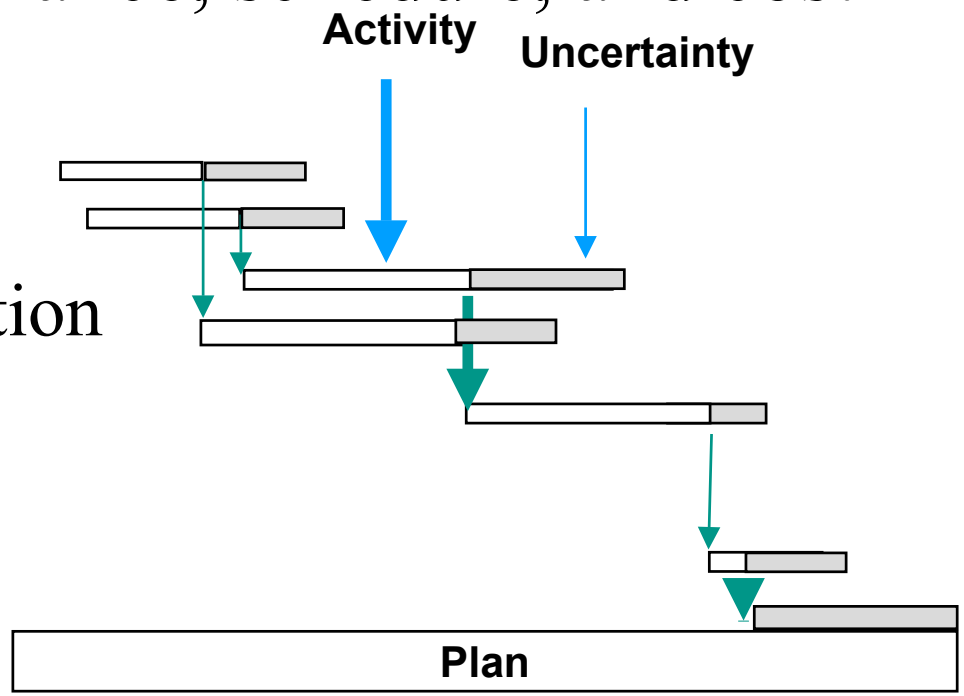
- Risk
  - A measure of the inability to achieve objectives
  - Two components (probability and consequences)
- Risk Management
  - Act or practice of controlling risk
    - Identifying and tracking risk drivers
    - Defining risk mitigation plans
    - Performing periodic risk assessments

Risk Planning

- Process has two segments
  - Implementing a comprehensive and active strategy to continuously identify, mitigate, and track program risks
    - Who does it
    - What do they do
    - When do they do it
    - How is risk shared
  - Documenting risk elements of program activities

Risk Assessment

- Process of identifying and analyzing program risks to increase the chances of meeting performance, schedule, and cost objectives
- Two segments
  - Risk Identification
  - Risk Analysis



Risk Identification

- Process of specifying, describing and documenting program risks and their sensitivities to other risks
  - Internal
  - External

Risk Analysis

- Process of evaluating program risks for their impacts to performance, cost, and schedule objectives
- Process includes assessing each risk's
  - Probability of occurrence, and
  - Consequences of failure to mitigate the risk
- Requires focused integrated effort by team to keep technical foundation matched to schedule and cost baseline with identified risk impacts reflected in additional time and resources

Risk Assessment Guidance

- Review requirements and technical products and process
- Identify and describe program risks
- Prioritize risks and analyze to quantify potential impacts
- Use risk handling to select risk mitigation options
- Quantify most-likely and risk-related time and resource inputs for schedule assessment and cost estimate
- Quantify risk excursions for schedule and resources
- Assess baseline program schedule considering risks
- Translate technical, schedule, and resource inputs to $$

Risk Handling

- Process that identifies, evaluates, selects, and implements risk handling options
  - to set risk at acceptable levels
  - given program constraints

Typical risk handling strategies can include

+ replan to eliminate the identified risk
+ avoid risk by changing requirements
+ transfer the risk
+ control the risk through active steps
+ assume the risk without special efforts

Risk Monitoring

- Process that systematically tracks and evaluates the performance of risk mitigation actions
  - against established metrics throughout the acquisition* process, and
  - develops further risk handling options as appropriate

* Acquisition includes any procurement from government or contractor sources within all phases from early research through logistics, operations, support, and disposal

Performance versus Technical

- DoD 5000 documents and Acquisition Program Baseline use "performance"
- AFMCP 63-101 uses "Technical"
  - Risk assessment characterizes the schedule and cost impacts of program risks based on technical "cause and effect" assessment
  - Technical includes: **threat, requirements, technology, engineering, manufacturing, environmental/safety/health, logistics, operations and support, test and evaluation, demilitarization and disposal**

Hierarchy of Risk

- "Technical" fits most descriptions of risk elements better than "performance" does

Recommend "Technical"

Technical Assessment (TA)

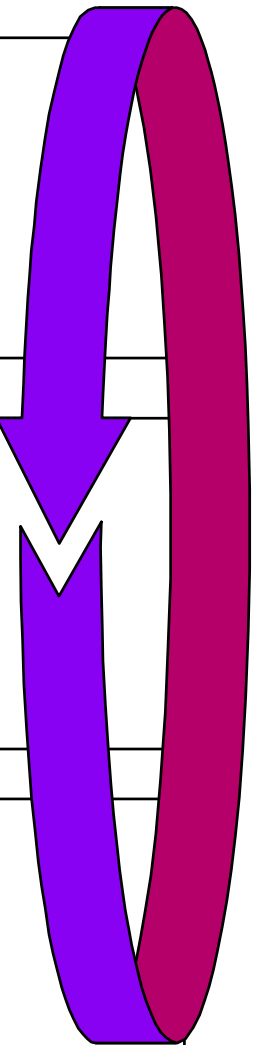
Provides Technical Foundation
(Requirements, technical, schedule, resources)
Identifies major program risks
Scopes schedule and cost consequences

Schedule Assessment (SA)

Evaluates Baseline Schedule
Incorporates technical assessment
Performs schedule analysis on program IMS
Provides Most Probable Schedule to Cost Team

Cost Estimate (CE)

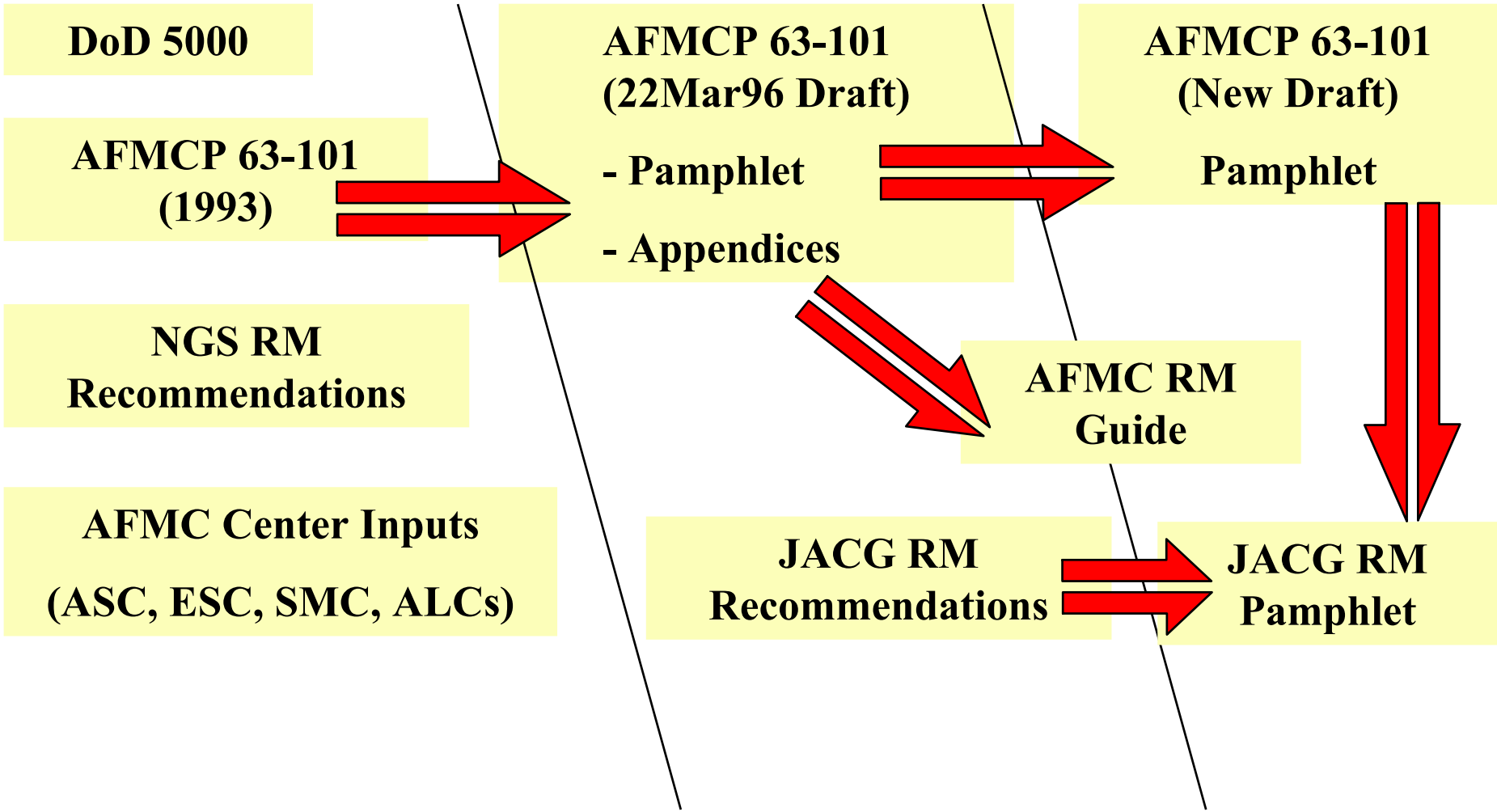
Based on TA and SA outputs
Translates technical and schedule risk into $s
Derives most probable cost and establishes budgetary requirements



Air Force Comments to Draft

- Pamphlet is too lengthy and technical
  - Keep it "What to"
  - Keep it short
- Appendices should be made a separate Guide Document and incorporated into Deskbook
- Make it consistent with DoD RM Study
- Consider adding section specifically for laboratories and small programs

Pamphlet Content



Proposed Pamphlet Outline
9May96

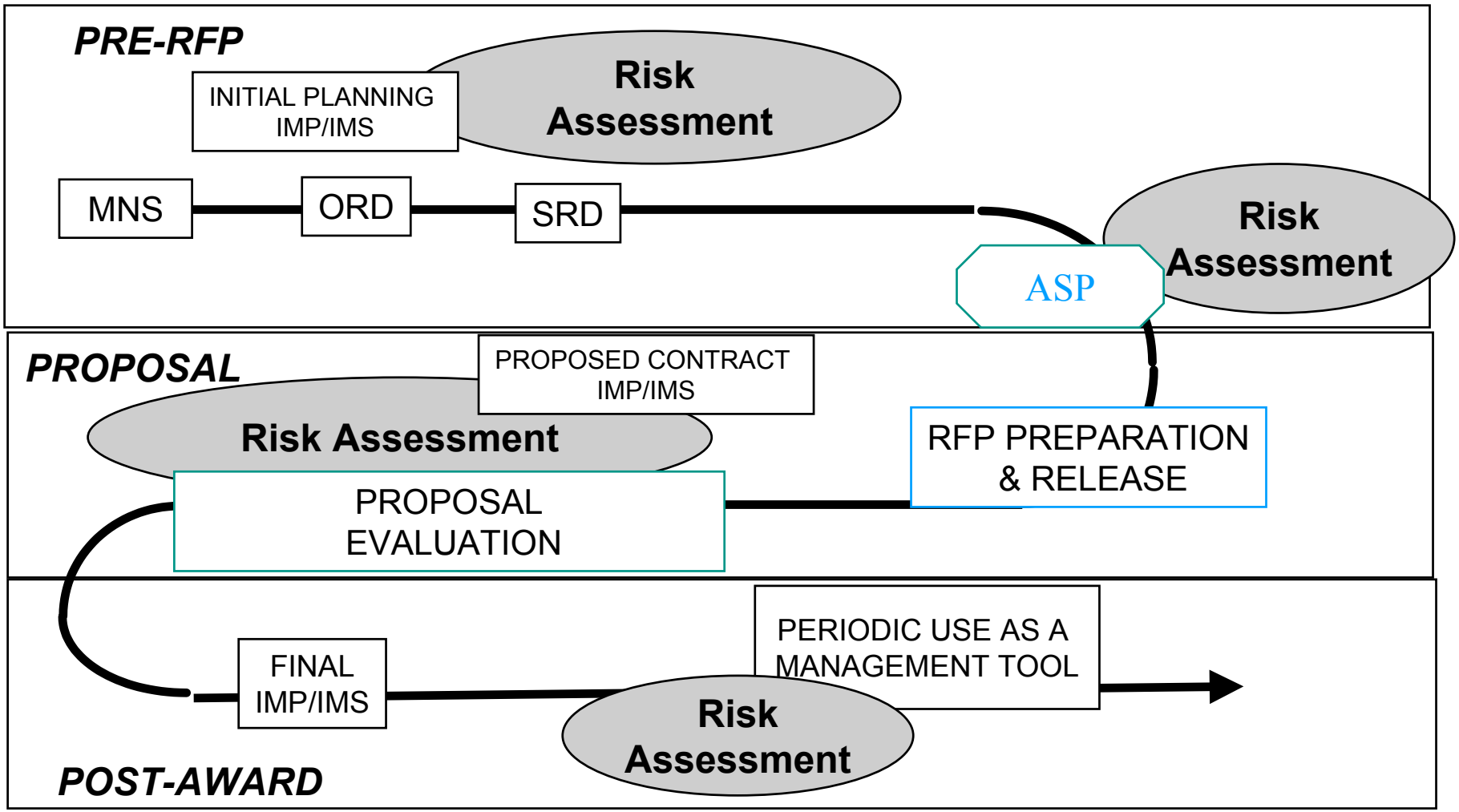
- Chapter 1 - Provide overview and purpose
- Chapter 2 - Define risk management process using OSD definitions
- Chapter 3 - Describe risk assessment process and methods
- Chapter 4 - Describe how risk management can be used through the program acquisition process
- Chapter 5 - Describe risk management after contract award

Ready for Next Service Inputs

NGS RM Recommendations

- Enhancements to Source Selection
  - Implement performance based RFPs
  - Implement risk management (in lieu of risk avoidance)
  - Focus RFP on what is essential for selection decision
  - Increase emphasis on past performance in determining proposal and performance risks

ASC and NGS Timeline



Navy

- As of 9 May 1996
  - Avoid IRA philosophy differences with Source Selection
  - Take out Mil-Std 499B
  - Para 1.4: RM is a key part of PM, not first step
  - Avoid mixing risk handling and risk mitigation
  - Tying risk assessment to pdf and cdf inputs and outputs within SS is risky and requires use of offeror inputs or good justification of evaluator delta and models
  - Inconsistency between titles and paragraph content
  - Pg 1-11, para 2.3 Collecting issues before going to SS board (SS should be a self contained assessment)
  - Listing risks in the RFP may suppress Ktr-submitted risks
    - Ask how they will address the listed risks
    - Could address in bidder conferences unless competitive advantage

Navy

- Scheduling a post-award meeting with contractor after award should deal with remaining issues after DR/CR during SS
- Pg. 1-13: Early ID of critical risks needs to be clear, especially as related to scoping the RFP and SS to hit risk areas
- SS focuses on risk as a key determinant, not THE one
- IRA is not the SS process, especially for Navy/Army
- Not all techniques of 3.5.3.2 are applicable to SS, but are generic approaches to cost estimates
- 4.3 risk management is not the heart of but IMPORTANT for planning the next page

Navy

- Early industry involvement (EII) and assessing contractor capability
  - Close coordination with PCO may not be identified
  - PM is responsible, not PCO
- Army would like to focus discussion of EII or SEI before SS due to leaving out offerors and resources required to do this
  - JASM, JPAT reviews helped, but was the RFP any better
- EII should focus on getting ideas for general industry viability, not assessing specific capability since this must be kept out of SS. If the SDCE offeror assessment is part of the RFP, then the results can be used in SS. See 4.4.1 and make it more generic to cover industry, not offeror.
- MIL-STD-1528 has been cancelled.
- Use of rolling down-select (JASM) should be approached with caution

Navy

- Technical, schedule, and cost issues should be discussed in presolicitation conferences, not proposal conferences
- Can ask for info pre-RFP, but can get info not applicable after RFP release
- 4.6, NGS recommended info not essential to proposal evaluation be included in RFP but under past performance
- Remove reference to using RA outside SS while performing RA inside SS
- High evaluation of proposal may be inconsistent with past performance, so watch out using the term "consistency" in 4.6.1.
- How to put a RFP together and limit CDRL items is not generic to risk management and should be put into perspective and avoid getting locked into a solution.

Navy

- Separate past performance from capability assessment
  - Past performance is not process capability assessment, which is more of a future view
- Level of detail same but more details probably greater on ACAT I/II programs (4.6.3)
- Unnecessary detail in SS segments at end of 4.6 and 4.7.
- Offeror development capability evaluation as part of site visits during source selections should be more generic but with a discussion of benefits and risks and handling the information
  - Verbal communication
  - Separate site visits are not always needed, but happen occasionally
  - Many ways to do this, such as surveys
  - SDCE has been done for years, but not applied to other areas

Navy

- 4.7.2, last paragraph has to come out since capability evaluation cannot be integrated with the past performance
  - Present is date of proposal submittal, past is anything before the proposal date
- Take out references to Air Force documents
- Use of Past Performance in the Navy was a subset of management and disappeared
  - Will become a part at the same level as technical within NAVAIR
- 5.1.2 is the same as 4.5.3
- Other more detailed comments are provided hard copy.

◆ OTHER COMMENTS

- Avoid addressing CAIV as an entity until better defined by OSD and accepted by lower level program acquisition groups
  - Avoid sloganism

ESC(NSG)

- Document is too long
- How much “what to” versus “how to”
- Discuss why risk management is important
  - Examples belong with the guidance
- Need to discuss impediments to implementing risk management
- Reduce draft emphasis on risk management in new proposed programs and source selection

- Update with new DoD references
- Appendix E risk scoring needs to be reviewed
- Clean up performance risk to avoid past performance confusion
- Dwell on using risk management to existing programs more than in draft

General Summary

- Use program management which includes risk as a part of the activities
- Carefully separate proposal and past performance risk from the risk assessment aspects of risk management
- Be more generic - Avoid implying any functional team or organization breakout
- Don't add sections addressing new DoD guidance and initiatives (e.g., CAIV)

Action Items

- ASC/AZ -
  - Get a new shorter pamphlet to JACG members
  - Plan to get three document numbers on the pamphlet: AMC, Navy, AFMC
  - Talk to Doug Patterson regarding DoD 4257-M and its applicability to current reference
- AFMC
  - Get appendices available as guide document which can be used as basis for a WWW version within DoD Deskbook
  - If AFMC cannot find an advocate for a technique willing to maintain the info, DON'T put it in the appendices

Guidance for Revision

- Begin with DoD structure and definitions
- Describe the risk management elements
- Address applying it for each phase
- Address how to apply risk management to existing programs

Backup for May Revision

Guidance for Revision

- Begin with DoD structure and definitions
- Describe the risk management elements
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- Address how to apply risk management to existing programs

Chapter 1

- Begin with DoD structure and definitions
- Outline:
- Source Material:
  - Existing chapter 1

Chapter 2

- Describe the risk management elements
- Outline:
- Source material:
  - Existing chapter 2 and parts of chapter 3

Chapter 3

- Address applying risk management for each phase
- Outline:
- Source material:
  - Existing chapter 4, parts of chapter 5, and parts of chapter 3

Chapter 4

- Address how to apply risk management to existing programs
- Outline:
  - Overview
  - Start to use existing metrics as indicators of problems
  - Use assessment to look at impacts
- Source material:
  - Existing chapter 5
  - Help reader relate with more actual examples
  - Benefits and problems with methods tried on current programs
    - Watchlists, metrics
    - Periodic assessment
    - Assessments for major ECP and CCP actions

Backup discussing risk assessment

Risk Assessment Guidance

- Review requirements and technical products and process
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Review Program

- Review and understand requirements
- Review technical products and process
- Review program master plan
- Research feasibility of program approach

- Guidance:
  - Get user involved early in performance and solution tradeoffs
  - Get subject matter expert inputs on program products and process
  - Document feasible program solutions and identified issues

Identify Risks

- Identify potential risks
- Define risk characteristics and possible influences on performance, schedule, and cost
- Guidance:
  - Engage subject matter experts for all non-business areas
  - Consider both internal and external risk sources over life cycle
  - Describe each identified risk

Prioritize and Analyze Risks

- Establish risk criteria for each category
- Analyze probability and consequence
- Prioritize risks using risk criteria
- Assess program risk level
- Guidance:

Define Risk Handling Options

- Use risk handling to select risk mitigation options

Assess Risk Impacts

- Quantify most-likely and risk-related time and resource inputs for schedule assessment and cost estimate

Assess Risk Excursions

- Quantify risk excursions for schedule and resources

Develop Program Schedule

- Assess baseline program schedule considering risks
- Guidance:
  - Use a master schedule that matches the master plan

Complete Cost Estimate

- Use technical, schedule, and resource inputs to estimate cost
- Guidance:
  - Realize that changes in product complexity influences material and process elements as well as time durations
  - Keep communication lines open for late developing changes in technical foundation to the assessment

Document Assessment

- Document assessment results, including integrated requirements, technical, schedule, and cost description and results
- Guidance:
  - Decide what is needed now and will be needed to track to later assessments
  - Keep in a library or information system for program and research source for new programs